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EXAMINER				
BERNSHTEYN, MICHAEL				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/529,180

Applicant(s)

TAKAHASHI ET AL.

Examiner

MICHAEL M. BERNSTEYN

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/86)
Paper No(s)/Mail Date 03/24/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 4 provides for the use of the liquid curing resin composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 4 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

It should be pointed out that all the below rejections under 35 U.S.C. 102 b) were made only for overlapping parts of the ranges for the number-average molecular weight, and weight percentage of components (A) and (B).

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Chawla et al. (U. S. Patent 5,496,870).

With regard to the limitations of claim 1, Chawla discloses **a curable liquid resin composition** comprising a **urethane (meth)acrylate** polymer and at least one (meth)acrylate compound containing a hydroxyl group and coated articles produced therefrom (abstract). The number average molecular weight of the urethane (meth)acrylate polymer contained in the composition is usually in the 700 to 20,000 range, which is partly within the claimed range (col. 5, lines 24-26).

Chawla discloses that the usage of the (meth)acrylate compounds (which correspond to the claimed component (B)) is in the range of from 5 to 60% of the composition, which partly overlaps the claimed range for component(B) (col. 7, lines 23-26).

With regard to the limitations of claim 1 concerning a glass transition point, Chawla is silent about it. However, in view of substantially identical ethylenically unsaturated monomers in the form of a homopolymer used by Chawla and instantly claimed as component (B), it is the examiner position to believe that Chawla's component (B) possesses this property. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *In re Fitzgerald* 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

With regard to the limitations of claim 2, Chawla discloses that examples of silane coupling agents which can be given are γ -aminopropyltriethoxysilane, γ -

mercaptopropyltrimethoxysilane, γ -methacryloxypropyltrimethoxysilane, etc. (col. 8, lines 39-42).

With regard to the limitations of claim 3, Chawla discloses that monofunctional compounds and polyfunctional compounds can be used as reaction dilution agents. Examples of monofunctional compounds which can be given include **N-vinylpyrrolidone**, **N-vinylcaprolactam**, **N,N-dimethyl(meth)acrylamide**, etc. (col. 5, lines 39-66).

With regard to the limitations of claim 4, Chawla discloses that the compositions are not merely a coating material for optical fiber. Because they have superior heat resistance, and superior curing and adherence characteristics, they are useful as a coating material for various types of substrates such as metal, plastics, wood, porcelain, and glass, and also finds application as an optical molding material, three-dimension molding material, printing plate material, and the like (col. 16, lines 35-42).

3. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanuda et al. (JP 07-310067).

With regard to the limitations of claims 1 and 3, Sanuda discloses a liquid curable composition comprising: (A) a **urethane-(meth)acrylate** of 5,000-15,000 number average molecular weight, (B) one or more than 2 compounds selected from **acryloyl morpholine**, **dimethylacrylamide**, diethylacrylamide and isopropylacrylamide, and (C) an acrylate. The component A is preferably a reaction product between a polyol such as polypropylene glycol, a polyisocyanate such as 2,4-tolylenediisocyanate and a hydroxyl group-containing (meth)acrylate such as 2-hydroxyethyl (meth) acrylate (abstract).

The weight ratio of the urethane (meth)acrylate compound is preferably from 30 to 70 wt. %, which is mostly within the claimed range; the weight ratio of the compound (B) is preferably from 5 to 70 wt. %, which is significantly within the claimed range (page 16, [0029], [0030]).

With regard to the limitations of claim 1 concerning a glass transition point, Sanuda is silent about it. However, in view of substantially identical ethylenically unsaturated monomers in the form of a homopolymer used by Sanuda and instantly claimed component (B), it is the examiner position to believe that Sanuda's component (B) possesses this property. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *in re Fitzgerald* 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

With regard to the limitations of claim 4, Sanuda discloses a **curable liquid** (pressure sensitive) **adhesive composition** which contains a urethane-(meth)acrylate of a specific number-average molecular weight, thus is useful as a material for architectural decoration because it is excellent in adhesion, resistance to heat and water, fabricability and high adhesion to glass or the like (abstract).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Sanuda et al. (JP 07-310067) in view of Ichida et al. (U. S. Patent Application Publication 2002/0127400).

The disclosure of Sanuda's reference resided in § 3 is incorporated herein by reference.

With regard to the limitations of claim 2, Sanuda does not disclose the usage of y-mercaptopropyltrimethoxysilane.

Ichida discloses a curable resin composition comprising an antioxidant, a UV absorber, and a (meth)acrylate oligomer comprising polyether units. Cured products made from the liquid curable resin composition have excellent light stability. The resin composition is suitable as a coating material for optical fibers (abstract).

Ichida discloses that a part of the (meth)acrylates containing a hydroxyl group can be replaced by compounds having a functional group which can be added to an isocyanate group. As examples of such a compound, .gamma.-aminopropyltriethoxysilane, **y-mercaptopropyltrimethoxysilane**, and the like can be given. Use of these compounds generally improves adhesion to substrates such as glass. (page 3, [0028]).

Both references are analogous art because they are from the same field of endeavor concerning liquid curable resin compositions.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate y-mercaptopropyltrimethoxysilane, as taught by Ichida in Sanuda's liquid curable resin composition in order to improve adhesion to substrates such as glass (US'400, page 3, [0028]), and thus to arrive at the subject matter of instant claim 2.

5. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamura et al. (U. S. Patent 6,191,187).

With regard to the limitations of claims 1 and 4, Yamamura discloses a liquid curable composition comprising: (A) a urethane (meth)acrylate polymer; (B) a (meth)acrylate compound; (C) a reaction diluent, and (D) a polymerization initiator. The composition has superior storage stability over a long period of time and, at a cured state, exhibits excellent UV resistance, heat resistance, yellowing resistance, and oil resistance (abstract).

The number average molecular weight of urethane (meth)acrylate polymer (A) is preferably 400-20,000, which is partly within the claimed range (col. 5, lines 56-57).

The amount of the urethane (meth)acrylate polymer (A) is especially preferably 20-80% by weight, in order to provide the composition with better coatability to optical fibers and a cured material with excellent flexibility, which is mostly within the claimed range (col. 5, lines 59-64).

With regard to the limitations of claim 1 concerning a glass transition point, Yamamura is silent about it. However, in view of substantially identical ethylenically unsaturated monomers in the form of a homopolymer used by Yamamura and instantly claimed component (B), it is the examiner position that Yamamura's component (B) possesses this property. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *In re Fitzgerald* 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

With regard to the limitations of claim 2, Yamamura exemplifies the usage of γ -mercaptopropyltrimethoxysilane as a silane coupling agent (Example 1, col. 9, line 65 through col. 10, line 12).

With regard to the limitations of claim 3, Yamamura discloses N-vinylpyrrolidone, N-vinylcaprolactam, (meth)acryloyl morpholine, dimethylaminoethyl (meth)acrylate, etc. (col. 6, lines 62-64).

6. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated independently by Taki et al. (JP-286019 and JP 07-292323), Honjo et al. (JP 63-215707 and 63-130608), Kobayashi et al. (JP 06-171051), Takahashi et al. (JP 11-100419), Maruyama et al. (JP 11-302342), Suzuki et al. (JP 2000-086936), Baba et al. (JP 08-127630), and Takahashi et al. (WO 00/09620).

With regard to the limitations of claim 1, the above mentioned references clearly disclose the curing resin compositions comprising the following components (A) and (B): (A) a urethane (meth) acrylate, and (B) an ethylenically unsaturated monomer in the form of a homopolymer. The urethane (meth) acrylate has the number-average molecular weight and the weight ratios of components (A) and (B) in the overlapping ranges. The component (B) contains at least one compound selected from the group consisting of acryloylmorpholine, dimethylacrylamide, N-vinylpyrrolidone and N-vinylcaprolactam. All these resin curable composition are suitable for use as an adhesive.

Taki et al. (JP-286019): abstract; page 5 [0016]; page 6, [0019]; pages 7-8, Table 1, example 1.

Taki et al. (JP 07-292323): abstract; page 2, [0004]; page 4, [0014]; page 5, [0016], [0017]; page 6, [0020]; page 7-8, Table 1, example 1.

Honjo et al. (JP 63-215707): abstract.

Honjo et al. (JP 63-130608): abstract.

Kobayashi et al. (JP 06-171051): abstract.

Takahashi et al. (JP 11-100419): abstract; page 1, [0001]; page 3, [0007]; pages 6-7, [0024]; page 7, [0031]; pages 9-10, [0042]; page 12; [0051],

Maruyama et al. (JP 11-302342): abstract; page 1, claims 1 and 2; page 4, [0018]; page 8, [0036], example 1.

Suzuki et al. (JP 2000-086936): abstract; page 3, [0012]; page 6, [0027]; page 9, [0044], example.

Baba et al. (JP 08-127630): abstract.

Takahashi et al. (WO 00/09620): abstract; page 12, line 29 through page 13, line 8; page 20, lines 7-9; page 22, line 17; page 30, lines 4-28.

It is noted that with regard to the limitations of claim 1 concerning a glass transition point, the above mentioned references are silent about it. However, in view of substantially identical ethylenically unsaturated monomers in the form of a homopolymer used by the prior arts and instantly claimed components (B), it is the examiner position to believe that the ethylenically unsaturated components (B), which are disclosed in the prior arts, possess this property. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *In re Fitzgerald* 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

It is noted that with regard to the limitations of claim 1 concerning a liquid curable composition, the above mentioned references are silent about it. However, in view of

the facts that all these prior arts use of loading solvents or diluents, it is the examiner position to believe that all curable compositions described in the prior arts are liquid.

Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *In re Fitzgerald* 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael M. Bernshteyn/
Examiner, Art Unit 1796

/M. M. B./
Examiner, Art Unit 1796